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SUMMARY OF INSECT CONDITIONS NORTHERN ROCKY MOUNTAINS 1956

(Preliminary Report)

Current forest insect surveys by the Missoula Forest Insect Laboratory and its cooperators have only recently been completed. However, it is possible to present this preliminary picture of 1956 insect infestations in eastern Washington, northern Idaho, Montana, northwestern South Dakota and northwestern Wyoming. The known infestations are briefly described below. Their extent and severity are subject to change when all field data from the surveys are summarized.

Spruce budworm.--Based upon extensive aerial and ground appraisal surveys, the spruce budworm infestations may be described as follows: (1) an apparent decline in infested acreage in the Craig Mountain area of northern Idaho, (2) an apparent increase in infested acreage in Montana due probably to a more intensive survey in 1956 and/or a natural spread of the insect, (3) an over-all decline in the degree of damage caused by the insect in 1956 due probably to recent spraying of many of the active infestation centers, the obscuring of damage by luxuriant fir needle growth in 1956, and/or a decline in budworm populations resulting from natural control forces.

The gross acreage of visible spruce budworm damage in 1956 is estimated at 3,531,600 acres on federal, State and private lands in Forest Service Region 1. The corresponding acreage in 1955 was estimated at 3,100,000 of which 885,000 acres were treated by aerial spraying to control the budworm in July 1956. The 1956 infested acreage by national forest and other infested areas is shown in table 1. Most of the 1956 infested acreage is classified as lightly defoliated. The current spruce budworm infestations still constitute a serious forest insect problem in the Region.

Blackheaded budworm in western hemlock.--Several localized but very severe infestations of what is tentatively identified as blackheaded budworm, Acleris variana (Fern.), have been reported from Glacier National Park, and portions of the Kaniksu and Kootenai National Forests in Idaho and Montana, respectively. These first year infestations have wrought considerable damage to hemlock foliage and some of the trees appear to be very heavily defoliated at the present time. The infestation at Glacier National Park is centered in McDonald Creek and may cover 5,000 acres when survey data are fully summarized. The Kaniksu-Kootenai infestations are centered in Lightning Creek, Keeler Creek and Bull River drainages and these have been found to extend to an aggregate of 12,500 acres.

Blackheaded budworm in alpine fir.--The infestation of this insect reported in alpine fir stands in the Bechler River area of Yellowstone National Park in 1955 covered then about 14,000 acres. The infestation is superimposed upon one of a lodgepole sawfly, tentatively identified as Neodiprion sp.. An aerial survey in 1956 indicated an increase in infestation acreage to 19,200 acres. A ground examination of the infestation in 1956 revealed that most of the budworm caterpillars had succumbed when about half grown from what is presumed to be polyhedrosis, a virus disease of insects.

Lodgepole pine sawfly.--A sawfly, Neodiprion sp. caused considerable defoliation in lodgepole pine in the Bechler River area of Yellowstone National Park in 1955 on 5,200 acres. A continued heavy defoliation occurred in 1956 but with a decrease in infested acreage to 1,300. A portion of this infested acreage is superimposed with the infestation of blackheaded budworm described above. A ground examination in 1956 likewise showed heavy larval mortality, presumably from polyhedrosis.

Larch defoliators.--Some confusion still exists over the cause of extensive larch defoliation in western Montana, northern Idaho and northeastern Washington. In an effort to determine the causal insects, collections of several species were made during the summer season and placed in rearing at the Missoula Laboratory. These species have since been reared to adult stage and sent to the U. S. National Museum for determination. The insect most frequently collected in June 1956 was the larch budmoth, Zeiraphera griseana (Hubner). Late in August a looper, Semiothisa sexmaculata (Pack.), was the principal cause of defoliation. Other insects collected from larch during the season were several species of undetermined sawflies, some feeding on larch foliage in June and others in September. The total infested area resulting from the activity of these insects is estimated at 100,000 acres. The picture is further confused by the abundance of larch needle cast fungus, Hypodermella sp..

Gelechiid moth in lodgepole pine.--A small but interesting infestation of a gelechiid moth, species undetermined, covers several thousand acres in the Swan River Valley of the Flathead National Forest, Montana. Most factual information regarding the extent of damage must await summarization of survey data.

Douglas-fir tussock moth.--Approximately 10,000 acres of scattered Douglas-fir tussock moth infestations were surveyed in 1955 in northeastern Washington and northern Idaho. The 1956 survey shows most of these infestations to have diminished to endemic status in 1956, presumably from heavy parasitization. The 1956 survey revealed two new tussock moth infestations, the only active ones recorded in the Region this year. These comprised about 1,000 acres on the west shore of Flathead Lake in Montana and a small area of several hundred acres near Plummer, Idaho. Both of these latter infestations appeared to have subsided during the caterpillar stage early in August 1956 because of the prevalence of polyhedrosis and parasites. As a result of these declines, no serious tussock moth infestations are believed to be present in Forest Service Region 1.

Engelmann spruce beetle.--The major epidemic which has persisted since 1952 in western Montana and northern Idaho appears to have returned to endemic infestation status in 1956 with the exception of a few scattered active centers on the Lolo and Kootenai National Forests. A summarization of survey data (table 2) shows the infestation level and trend from areas which were not controlled. Additional blowdown in spruce timber type during the past year may cause some build-up of beetle populations if the material is not salvaged before the next beetle flight season.

Douglas-fir beetle.--A number of small localized epidemic infestations of the Douglas-fir beetle have been surveyed from the air in 1956. None of them constitutes a serious threat to fir stands at the moment. The over-all picture for Forest Service Region 1 indicates that the Douglas-fir beetle losses are lower in 1956 than for several years past. No estimate of infested acreage, all of which is scattered, is available now.

Mountain pine beetle.--No epidemic infestations other than two small ones in Glacier National Park have been reported thusfar. The beetle damage in these two areas is shown in table 3. The heavy tree mortality in the White Sulphur District of the Lewis and Clark National Forest was subsequently revealed by the insect survey to have been caused by porcupine feeding. Host, lodgepole pine.

Black pine leaf scale.--The infestation in the Spokane area appears to have returned to an epidemic status on ponderosa pine following the heavy scale mortality from the freeze of March 1950. No estimates are available as to the area of damage or of the amount of individual tree damage.

Table 1.--Gross acreage of visible 1955 and 1956 spruce budworm damage in western Montana, northwestern Wyoming, and northern Idaho[1/]

Infested areas	1955	1956
	MONTANA-WYOMING	
Beaverhead National Forest[2/]	372,900	254,600
Bitterrot National Forest	10,400	298,200
Deerlodge National Forest	490,500	535,200
Flathead National Forest	900	2,500
Gallatin National Forest	502,200	936,700
Helena National Forest	842,300	640,000
Lewis and Clark National Forest	408,400	281,600
Lolo National Forest	89,200	69,800
Blackfoot Forest Protective Assn.	186,300	226,800
Yellowstone National Park	5,400	142,500
Montana-Wyoming Subtotals	2,908,500	3,387,900
	IDAHO	
Lolo National Forest	101,900	
Nezperce National Forest	100	83,700
Craig Mountain	89,500	60,000
Idaho Subtotals	191,500	143,700
REGIONAL TOTALS	3,100,000	3,531,600

1/ Does not include 885,000 acres of 1955 budworm infestation controlled by aerial spraying in July 1956.

2/ Including intermingled other Federal, State, and privately owned infested forest land.

Table 2.--Average annual percentage of 1952 spruce volume killed by the Engelmann spruce beetle on typical uncontrolled infested areas

Infested area	Acres	1952-1953	1954	1995	1956
COLVILLE NATIONAL FOREST	Wn.				
Upper Salmo	1,715	------12.5-----		0.7	0.9
GLACIER NATIONAL PARK					
McDonald Creek	4,200	30.3	18.5	8.3	1.0
FLATHEAD NATIONAL FOREST					
Kletomus Creek	1,100	5.0	1.7	2.3	0.3
Piper Creek	862	7.7	5.1	1.6	0.2
Soup Creek	990	8.5	0.5	0.4	0.0
KOOTENAI NATIONAL FOREST					
Porcupine Creek	600	15.5	22.7	7.2	2.9
S. Fork Keeler Creek	1,300	58.3	19.4	0.9	0.2
LOLO NATIONAL FOREST					
Selway-Bitterroot	1,700	21.0	11.2	10.5	4.2
Total Averages	12,467	22.9	12.8	5.0	1.4

Table 3.--Mountain pine beetle infestations in Glacier National Park, Montana. Host, lodgepole pine.

Infested area	1954	1955	1956
KINTLA LAKE-STARVATION RIDGE			
Infested acreage	400	400	400
Number of infested trees per acre	2.2	4.4	2.1
PARK CREEK			
Infested acreage	200	200	200
Number of infested trees per acre	9.1	3.3	3.4